

# FLOW, SILT AND SEDIMENT



These activities will give you and your group some valuable information which might help you when solving the crime.

## What is flow?

Talk with your group about the word 'flow'. What kinds of things 'flow'?



Look up the meaning of the word 'flow' in the dictionary. Write a sentence to show that you know the meaning of the word.

What causes water to move? Make a list of all the bodies of water that you know about. Here's a start: river, lagoon, lake

## What causes water to move?



Think and talk about these questions:

1. Does water in an estuary move? What causes it to move?
2. Does water in a billabong move?
3. What words would you use to describe the way water moves in a wetland?
4. What words would you use to describe the way water moves in a lagoon?



Do you think the water in the river here would be moving quickly or slowly? Why? Discuss with your group the effects this might have.

# Sediment or silt?

The *Macquarie Dictionary* defines sediment and silt like this:

- Sediment is matter which settles to the bottom of a liquid
- Silt is earthy matter, fine sand or the like, carried by moving or running water and deposited as sediment.

Look at each picture to answer the questions.



[Streambank erosion](#)

J.Kelley / [SoilScience](#) [CC BY 2.0](#)

1. What do you think happened here?
2. What do you think happened after the rain?
3. How do you think this began?
4. What would be the effect on riparian flora and fauna?



[Erosion from agricultural fields \(2\)](#) [SoilScience](#) [CC BY 2.0](#)

1. Should the farmer who owns the paddock to the left be worried? Why?
2. Where has all the soil gone? Why has so much soil been washed away?
3. What keeps soil in place? Erosion over time has helped to shape our earth, so why is it such a problem in Australia now?
4. What might happen to silt in a fast moving stream?

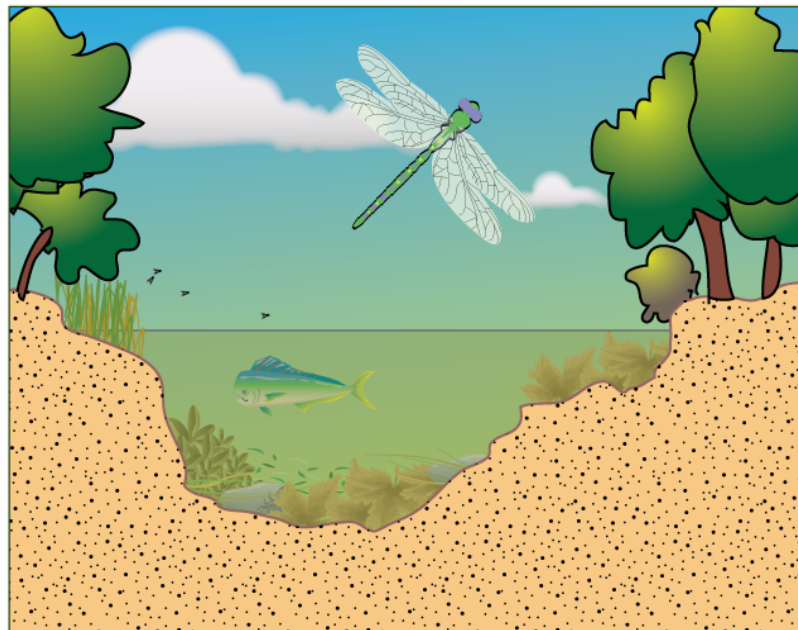




1. What do you think has caused the problem in the image to the left?
2. How might the damage have been prevented?



This cross section shows a still pond. Sediment has dropped to the bottom of the pond and is providing a home for the creatures in the water. Explain how lack of flow can be an advantage.



## Research



Use the internet and other sources of information to find out what might affect the flow of water in a river. Find out what happens when water is moving quickly along a watercourse like a stream, creek or river.

# How can flow be interrupted or changed?

Hint: Some of these things happen naturally, some are the result of human activity.

In your group, complete the chart:

Cause	Human/natural	Change to river	Our predictions
Farmer removes dead trees	Human	More water flows more easily	Protection for fish disappears, fish die
?	Natural	?	?

What difference does it make if the flow is changed?

Look back at the previous activity. You made some predictions about the possible results of changes to the river's flow. Use your sources of information to verify your predictions.

1. What is meant by the terms 'turbidity' and 'erosion'?

See:

[http://www.ipswich.qld.gov.au/documents/environment/activity\\_sheet\\_2\\_monitoring\\_water\\_quality.pdf](http://www.ipswich.qld.gov.au/documents/environment/activity_sheet_2_monitoring_water_quality.pdf)

2. What part does oxygen play in the health of the river? Explain the effect of lack of oxygen on plants and animals in the river.

Water that flows, bubbles or gurgles over rocks gathers many things. There is one thing it gathers which is vital to the life of the river. What is it?



Look again at the pictures earlier in this study sheet.

Prepare a demonstration to show others in your class how soil is moved from one place to another. You will need to show what moves the soil. Explain what happens when soil is moved.

## Extension activities

1. One farmer decides to clear 300 hectares of hilly land on his property to increase the amount of land he can use to graze cattle. Role-play the response of concerned members of his local community.

<http://www.derm.qld.gov.au/education/teachers/catchment/activities/activity07.html>  
[http://www.derm.qld.gov.au/education/teachers/catchment/resources/catchment\\_resource\\_sheet\\_10.pdf](http://www.derm.qld.gov.au/education/teachers/catchment/resources/catchment_resource_sheet_10.pdf)

2. Find out which catchment your school is in. You could use Google Maps to make a map or model of your own catchment. The following link will help you with ideas about how to make a topographic model of your catchment.

[www.nrw.qld.gov.au/factsheets/pdf/land/l75.pdf](http://www.nrw.qld.gov.au/factsheets/pdf/land/l75.pdf)